IPMDAR Requirements & Implementation

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Agenda

- Introduction
- IPMDAR Policy Review
- IPMDAR Integration With EVM-CR
- Analysis Demo With Excel Pivot Data
- Questions

IPMDAR POLICY REVIEW: THE DATA

The EVM Policy Evolution

Pre-PARCA: CPR & VARs DID and IMS DID

- Separate (disconnected) deliverables
- CPR (Format 1-4) is a printable report format (and EDI 839)
- IMS is a native tool format (or a printed image of a GANTT)

PARCA (2012): IPMR DID Combines CPR, VARs and IMS

- Reporting requirements aligned to capture cost/schedule data integrated
- Adopted UNCEFACT XML(1) Schema for all formats
  - Formats 1-4 mostly untouched (EDI839 to XML); plus printable reports
  - Introduced Format 6: XML snapshot of IMS (plus native)
  - Introduced (misunderstood) Format 7: Time-phased Format 1

AAP (2020): IPMDAR (EVMS Data, Not Printable Reports)

- Corrects technical defects with cost/schedule integration
- JSON(1) encoding replaces XML
  - Format 6 mostly untouched (replaced with IPMDAR SPD)
  - Replace Formats 1-4, 7 with data more closely aligned to contractor EVMS (no requirement for printable reports)
- Reframed concept of VARs to facilitate conversation (what is needed by Govt)

(1) XML: eXtensible Markup Language; JSON: JavaScript Object Notation

IPMR versus IPMDAR

IPMR Strengths / Purpose

- Performance analysis at reporting level (e.g. WBS, OBS)
- Gold Card Analytics (CPI, SPI, VAC, TCPI, EAC)

Limitations / Weakness

- Visibility into management controls (WBS & OBS vs. CA/WP)
- Visibility into execution plan (partial future forecast reporting)
- Limitations for cost/schedule integration visibility
- Visibility into retroactive contract changes

IPMDAR Same Strengths / Capability

- Generate performance analysis at reporting level (e.g. WBS, OBS)
- Gold Card Analytics (CPI, SPI, VAC, TCPI, EAC)
- Can generate legacy formats

And So Much More…

- CA or WP visibility
- Hours and dollars
- Element of Cost visibility
- Fully time-phased future plan
- Positive traceability between cost and schedule
- Visibility into retroactive contract changes with time-phased To Date

Greater Focus On Forward Looking Analytics

IPMR: Reports from EVMS (e.g., Outputs)

CPR Format 1: WBS View

COST PERFORMANCE REPORT
FORMAT 1 - WORK BREAKDOWN STRUCTURE

Form Approved
OMB No. 0704-0188

1. CONTRACTOR	2. CONTRACT	3. PROGRAM	4. REPORT PERIOD
a. NAME: ACME Construction b. LOCATION: Denver, CO	a. NAME: ACME Housing b. NUMBER: ACME - 1000 c. TYPE: FFP d. SHARE RATIO:	a. NAME: ACME Housing b. PHASE (X one) [ ] RDT&E [X] PRODUCTION	a. FROM: 01-JAN-02 b. TO: 31-JAN-02

5. CONTRACT DATA

a. QTY	b. NEG COST	c. EST COST AUTH UNPR	d. TGT PROFIT/FEE	e. TGT PRICE	f. EST PRICE	g. CONT CEILING	h. EST CEILING
0	$183,852	$0	$36,147 / 20.00%	219,999	219,999	0	0

6. EST COST AT COMPLETION	MGMT EST AT COMPL (1)	CONT BUDGET BASE (2)	VARIANCE (3)
a. BEST CASE	$227,009		
b. WORST CASE	$165,467		
c. MOST LIKELY	$226,158	$183,852	-$42,306

7. AUTHORIZED CONTRACTOR REPRESENTATIVE

a. NAME (Last, First, Middle Initial)	b. TITLE
Ted Smith	Manager
c. SIGNATURE	d. DATE SIGNED
	31-JAN-02

8. PERFORMANCE DATA

ITEM	CURRENT PERIOD BUDGETED COST WORK SCHED	CURRENT PERIOD BUDGETED COST WORK PERF	CURRENT PERIOD ACTUAL COST WORK PERF	CURRENT PERIOD VARIANCE SCHED	CURRENT PERIOD VARIANCE COST	CUMULATIVE TO DATE BUDGETED COST WORK SCHED	CUMULATIVE TO DATE BUDGETED COST WORK PERF	CUMULATIVE TO DATE ACTUAL COST WORK PERF	CUMULATIVE TO DATE VARIANCE SCHED	CUMULATIVE TO DATE VARIANCE COST	AT COMPLETION BUDGET	AT COMPLETION EST
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
1.1.1 Concrete	9,670	8,757	26,150	-912	-17,393	9,670	8,757	26,150	-912	-17,393	11,485	28
1.1.2 Framing	7,089	5,355	6,250	-1,734	-895	7,089	5,355	6,250	-1,734	-895	27,147	28
1.1.3 Plumbing	0	0	0	0	0	0	0	0	0	0	5,704	5
1.1.4 Electrial	0	0	0	0	0	0	0	0	0	0	14,070	14
1.1.5 Interior	0	0	0	0	0	0	0	0	0	0	6,328	7
1.1.6 Roofing	0	0	0	0	0	0	0	0	0	0	1,730	1
OVERHEAD	16,062	14,317	0	-1,745	14,317	16,062	14,317	0	-1,745	14,317	75,684	61
b. COST OF MONEY	19	17	0	-3	17	19	17	0	-3	17	82	
c. GEN & ADMIN	5,429	4,702	0	-726	4,702	5,429	4,702	0	-726	4,702	23,237	18
d. UNDISTRIBUTED BUDGET											0	
e. SUBTOTAL (PM Baseline)	38,269	33,149	32,400	-5,120	749	38,269	33,149	32,400	-5,120	749	165,467	165
f. MANAGEMENT RESERVE											18,385	
g. TOTAL	38,269	33,149	32,400	-5,120	749	38,269	33,149	32,400	-5,120	749	183,852	

CPR Format 2: OBS View

COST PERFORMANCE REPORT
FORMAT 2 - ORGANIZATIONAL CATEGORIES

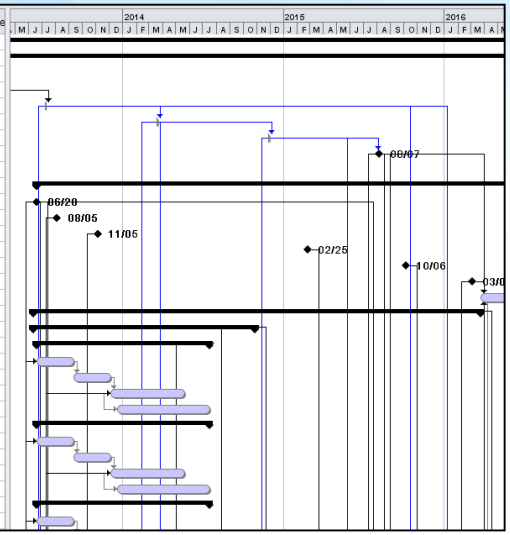
1. CONTRACTOR	2. CONTRACT	3. PROGRAM
a. NAME: ACME Construction b. LOCATION: Denver, CO	a. NAME: ACME Housing b. NUMBER: ACME - 1000 c. TYPE: FFP d. SHARE RATIO:	a. NAME: ACME Housing b. PHASE (X one) [ ] RDT&E [X] PRODUCTION

5. PERFORMANCE DATA

ITEM	CURRENT PERIOD BUDGETED COST WORK SCHED	CURRENT PERIOD BUDGETED COST WORK PERF	CURRENT PERIOD ACTUAL COST WORK PERF	CURRENT PERIOD VARIANCE SCHED	CURRENT PERIOD VARIANCE COST	CUMULATIVE TO DATE BUDGETED COST WORK SCHED	CUMULATIVE TO DATE BUDGETED COST WORK PERF	CUMULATIVE TO DATE ACTUAL COST WORK PERF	CUMULATIVE TO DATE VARIANCE SCHED	CUMULATIVE TO DATE VARIANCE COST	BUDGET	EST	VAR
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Construction													
Construction	12,116	9,560	10,300	-2,556	-740	12,116	9,560	10,300	-2,556	-740	17,226	17,965	-739
Management													
Project Management	7,503	5,668	6,250	-1,835	-582	7,503	5,668	6,250	-1,835	-582	19,475	20,057	-582
SubCont													
Subcontractor Mgmt	13,203	13,203	15,850	0	-2,647	13,203	13,203	15,850	0	-2,647	36,272	38,919	-2,647
SUBTOTAL	32,821	28,430	32,400	-4,391	-3,970	32,821	28,430	32,400	-4,391	-3,970	72,973	76,941	-3,969
b. COST OF MONEY	19	17	0	-3	17	19	17	0	-3	17	82	65	17
c. GEN & ADMIN	5,429	4,702	0	-726	4,702	5,429	4,702	0	-726	4,702	23,237	18,537	4,700
d. UNDISTRIBUTED BUDGET											0	0	0
e. SUBTOTAL (PM Baseline)	38,269	33,149	32,400	-5,120	749	38,269	33,149	32,400	-5,120	749	165,467	165,569	-102
f. MANAGEMENT RESERVE											18385		
g. TOTAL	38,269	33,149	32,400	-5,120	749	38,269	33,149	32,400	-5,120	749	183,852		
6. RECONCILIATION TO CONTRACT BUDGET BASE													
a. VARIANCE ADJUSTMENT									0	0			
b. TOTAL CONTR VARIANCE									0	0	0	0	0

IMS: GANTT View of Tasks

ID	WBS Cu...	Task Name	% Co...	Duration	Start	Finish	Base
1	1	Sea System Schedule	0	1308d?	02/21/12	02/23/17	
2		Contract Milestones	0	1308d	02/21/12	02/23/17	
3		Contract Award	0	0d	02/21/12	02/21/12	
4		CWBS Index and Dictionary	0	0d	10/29/12	10/29/12	
5		Initial Report	0	1d	07/09/13	07/09/13	
6		Interim Report 1	0	1d	03/19/14	03/19/14	
7		Interim Report 2	0	1d	11/27/14	11/27/14	
8		Interim Report 3	0	1d	08/07/15	08/07/15	
9		Final Report	0	1d	02/23/17	02/23/17	
10		Production Milestones	0	780d	06/20/13	06/15/16	
11		Start of Construction	0	0d	06/20/13	06/20/13	
12		Begin Keel Laying	0	0d	08/05/13	08/05/13	
13		Begin Main Engines Installat...	0	0d	11/05/13	11/05/13	
14		Launch Readiness Review...	0	0d	02/25/15	02/25/15	
15		Initial Operation Capability	0	0d	10/06/15	10/06/15	
16		Start Final Outfit	0	0d	03/04/16	03/04/16	
17		Final Contract Trials (FCT)	0	60d	03/24/16	06/15/16	
18	1.1	Ship	0	727d?	06/11/13	03/23/16	
19	1.1.1	Hull Structure	0	360d?	06/11/13	10/27/14	
20	1.1.1.1	SHELL/SPT STRUCTURE	0	280d	06/20/13	07/16/14	
21		1.1.1.1.A Measure	0	60d	06/20/13	09/11/13	
22		1.1.1.1.B Cut	0	60d	09/12/13	12/04/13	
23		1.1.1.1.C Fabricate	0	120d	12/05/13	05/21/14	
24		1.1.1.1.D Assemble	0	150d	12/19/13	07/16/14	
25	1.1.1.2	HULL BULKHEADS	0	280d	06/20/13	07/16/14	
26		1.1.1.2.A Measure	0	60d	06/20/13	09/11/13	
27		1.1.1.2.B Cut	0	60d	09/12/13	12/04/13	
28		1.1.1.2.C Fabricate	0	120d	12/05/13	05/21/14	
29		1.1.1.2.D Assemble	0	150d	12/19/13	07/16/14	
30	1.1.1.3	HULL DECKS	0	280d	06/20/13	07/16/14	
31		1.1.1.3.A Measure	0	60d	06/20/13	09/11/13	



IPMDAR Is A Data Snapshot from the EVMS

But… What Is It?

- A collection of JSON encoded data tables
- A generic database model of an EVMS

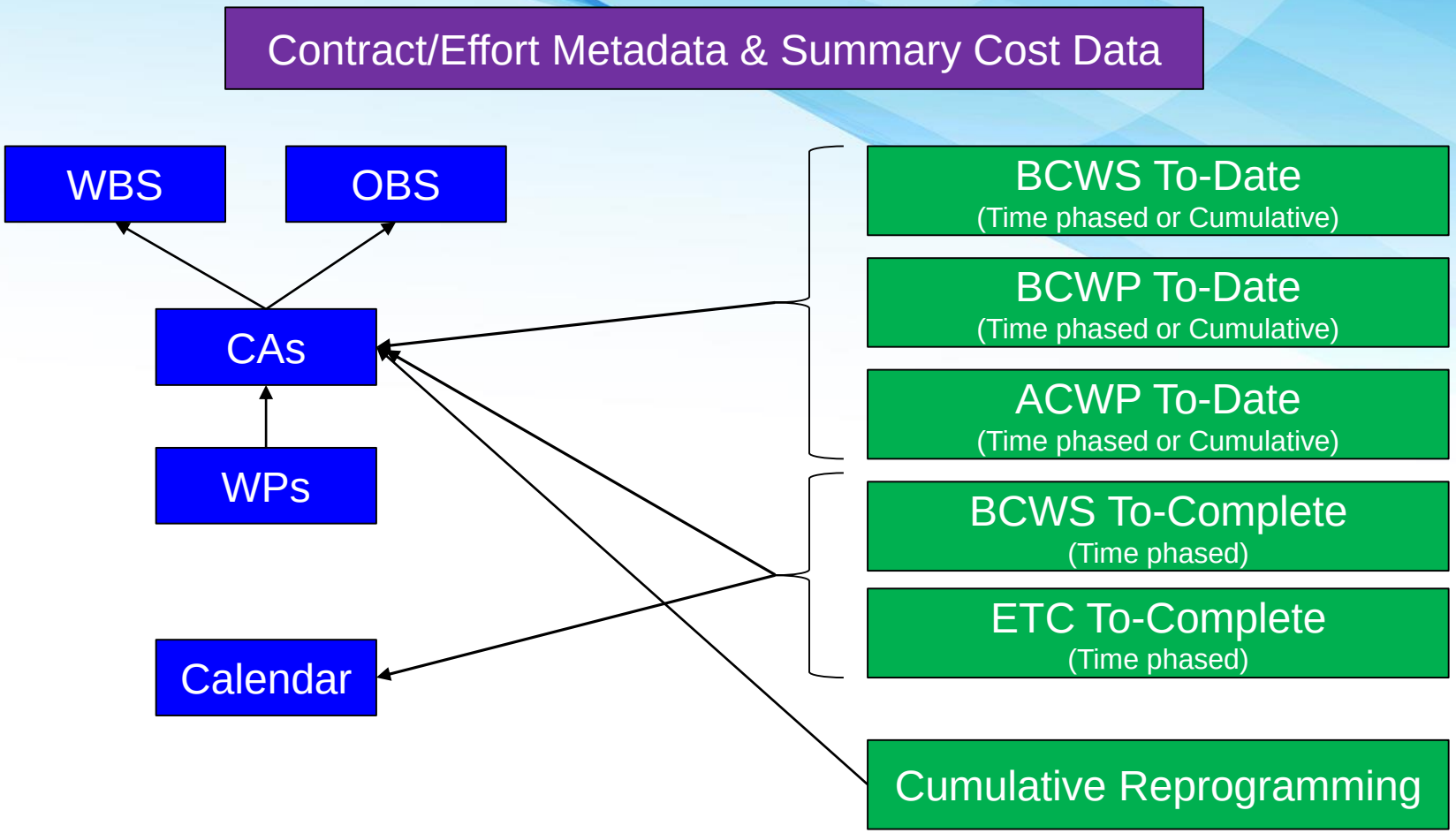
Key Components

- Metadata / Contract Level
- Structures (cost & schedule)
- Detailed Data
  - To Date
  - To Complete
  - Cumulative Reprogramming
  - Schedule Dates & Durations
  - Task Relationships
  - Resource Utilization

CPD Data Tables	SPD Data Tables
Dataset Configuration	Dataset Metadata
Dataset Metadata	Source Software Metadata
Source Software Metadata	Project Schedule Data
Contract Data	Proj. Custom Field Definitions
Summary Performance	Proj. Custom Field Values
Custom Summary Performance	Calendars
Summary Indirect (To Date)	Calendar Workshifts
Summary Indirect (To Complete)	Calendar Exceptions
Subcontractors	Tasks
Work Breakdown Structure	Task Schedule Data
Org. Breakdown Structure	Task Custom Field Definitions
Control Accounts	Task Custom Field Values
CA Custom Field Definitions	Task Constraints
CA Custom Field Values	Task Relationships
Work Packages	Task Outline Structure
WP Custom Field Definitions	Resources
WP Custom Field Values	Res. Custom Field Definitions
Reporting Calendar	Res. Custom Field Values
BCWS (To Date)	Resource Assignments
BCWP (To Date)	
ACWP (To Date)	
BCWS (To Complete)	
EST (To Complete)	
Reprogramming Adjustments	

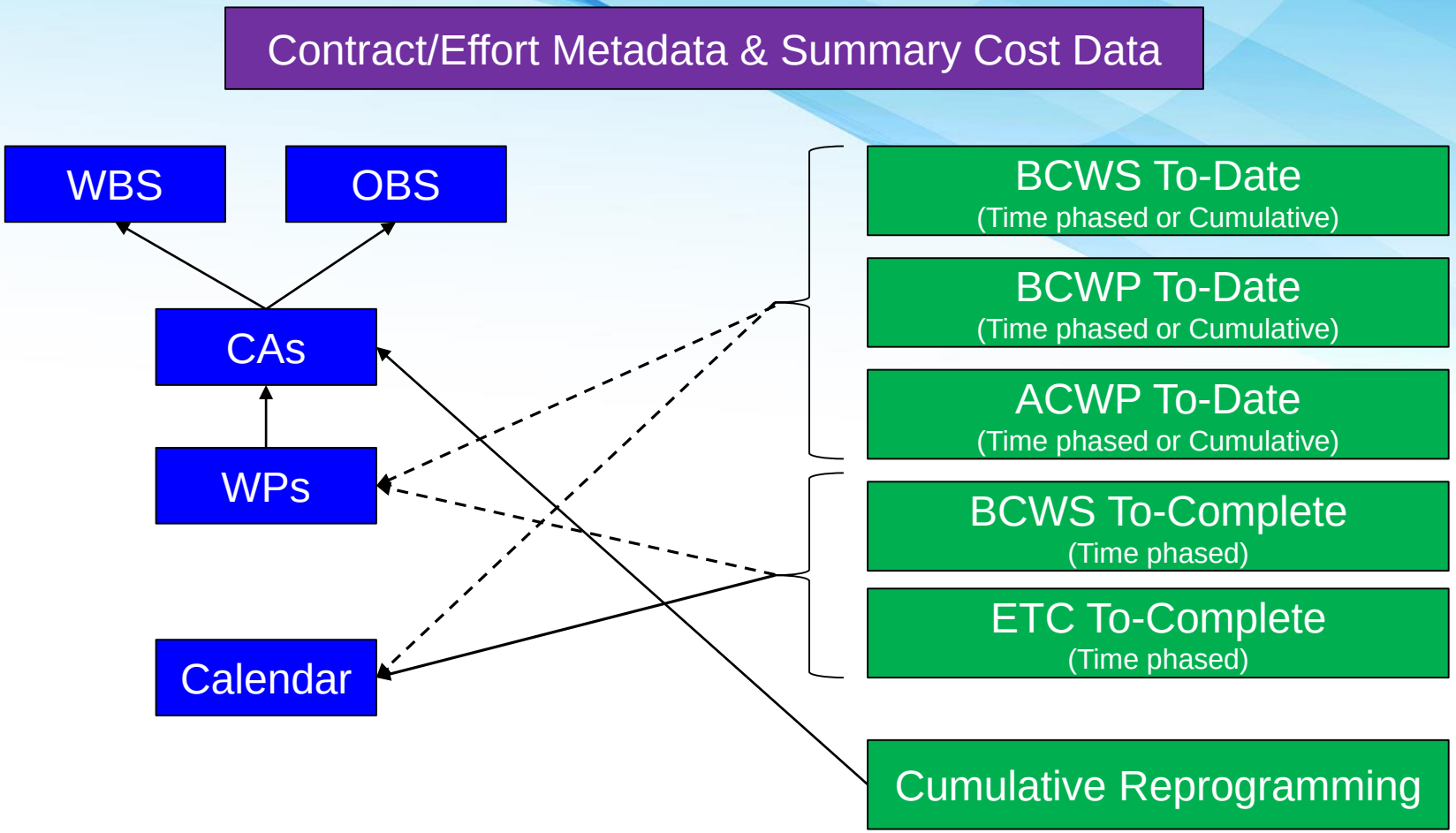
Defined in IPMDAR File Format Specification (FFS) Documents

IPMDAR CPD Structured Like The EVMS



Default Requirement: CA Level Data, To-Date Cumulative

IPMDAR CPD Structured Like The EVMS



Optional Extensions: WP Level Data, To-Date Time-Phased

IPMDAR CPD Relationship to IPMR 1-4

General

- Most metadata and contract/effort data maintained
- Removed
  - Quantity
  - Share Ratio
  - EVMS Acceptance
  - Signature

Format 1 (WBS) & Format 2 (OBS)

- WBS and OBS structures provided
- Data provided by control account or work package
  - Dollars & Hours, Element Of Cost, direct or “loaded”
  - Cumulative to date or time phased
  - Time phased future BCWS and ETC
  - Optional detailed (CA or WP) indirect charges
  - Reprogramming adjustments (if needed)
- Provided data can be used to generate Format 1 & 2 (with differencing from prior period report to derive current period data)

IPMDAR CPD Relationship to IPMR 1-4

Format 3 (Baseline Changes)

- BCWR (e.g. BCWS To Complete) is provided time phased by CA or WP
- PMB (time phased) at End of Period is derived from CA/WP to-complete data
- PMB at Beginning of Period is derived from EOP from prior period report
- Baseline changes derived at CA or WP levels by differencing submission files
  - Traceable to the WBS or OBS
  - Dollars, hours, EOC, etc

Format 4 (Staffing)

- Metadata / Contract Level
- Structures (cost & schedule)
- Detailed Data

Interpretation of CPD Data (e.g. "NoAdd Flag")

Data Contained in the CPD

- Hours
- Dollars
  - Total
  - By Element of Cost (Labor, Materials ODC, Sub)

Are Cost Values Direct?

- The legacy Format 4 format indicates data is direct.
- EOC values should be considered direct
- In practice, data submissions make extensive use of the wInsight "NoAdd" flag

The IPMDAR Support Multiple Representations

- Dollars can be reported as both direct and "loaded"
- EOC values can be reported as both direct and loaded
- Indirect values (OH, GA, COM) can be reported by CA/WP or in total

Dataset Configuration Table Identifies Content

- Reporting by Control Account or Work Package
- To-Date data as cumulative or time-phased
- Reporting by Element of Cost (required by DID)
- Reporting "Direct" costs
- Reporting Indirect Costs at the detailed level (CA or WP)

The Fine Print Is Important

Constraints for this table depend on DatasetConfiguration as follows:

If ToDate_TimePhased has a value of true, ReportingPeriodID must not be null; otherwise, ReportingPeriodID must be null.

If BCWS_ToDate_ByWorkPackage has a value of true, WorkPackageID must not be null and ControlAccountID must be null; otherwise, ControlAccountID must not be null and WorkPackageID must be null.

If Detail_HasDirectValues has a value of true, Value_Dollars_Direct must not be null; otherwise, the Value_Dollars_Direct must be null.

If BCWS_ToDate_HasElementOfCostValues has a value of true, each of Value_Dollars_LAB, Value_Dollars_MAT, Value_Dollars_ODC, Value_Dollars_SUB must not be null; otherwise, each must be null.

If BCWS_ToDate_HasElementOfCostValues and Detail_HasDirectValues each have a value of true, each of Value_Dollars_LAB_Direct, Value_Dollars_MAT_Direct, Value_Dollars_ODC_Direct, Value_Dollars_SUB_Direct must not be null; otherwise, each must be null.

If Detail_HasIndirectValues has a value of true, each of Value_Dollars_OH, Value_Dollars_COM, Value_Dollars_GA must not be null; otherwise, each must be null.

If not null, ReportingPeriodID must have a value that is less than or equal to the value of ReportingPeriodID in DatasetMetadata.

IPMDAR CPD FFS Data Tables

BCWS To-Date
(Time phased or Cumulative)

Table	BCWS_ToDate		
Entity	BCWS_ToDate		
Fields	Name	Data Type	Nullable
	ControlAccountID	StringID	Conditional
	WorkPackageID	StringID	Conditional
	ReportingPeriodID	Integer	Conditional
	Value_Dollars	Decimal	No
	Value_Dollars_Direct	Decimal	Conditional
	Value_Dollars_LAB	Decimal	Conditional
	Value_Dollars_LAB_Direct	Decimal	Conditional
	Value_Dollars_MAT	Decimal	Conditional
	Value_Dollars_MAT_Direct	Decimal	Conditional
	Value_Dollars_ODC	Decimal	Conditional
	Value_Dollars_ODC_Direct	Decimal	Conditional
	Value_Dollars_SUB	Decimal	Conditional
	Value_Dollars_SUB_Direct	Decimal	Conditional
	Value_Dollars_OH	Decimal	Conditional
	Value_Dollars_COM	Decimal	Conditional
	Value_Dollars_GA	Decimal	Conditional
	Value_Hours	Decimal	No
Primary Key	ControlAccountID, WorkPackageID, ReportingPeriodID		
Foreign Keys	ControlAccountID: ControlAccount(ID) WorkPackageID: WorkPackage(ID) ReportingPeriodID: ReportingPeriod(ID)		

Questions About EVM-CR

Contact Us

Photo By: *Lisa Ferdinando*
DOD ***VIRIN:*** *190911-D-BN624-0441C.JPG*

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EVM-CR Implementation of IPMDAR

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IPMDAR and the EVM-CR

- EVM-CR Reporting Requirements
- Incremental Delivery
- EVM-CR Submit & Review
- Tools

EVM-CR Reporting Requirement

IPMR

- All UNCLASSIFIED ACAT I programs required to submit

IPMDAR

- All UNCLASSIFIED programs required to submit – regardless of ACAT designation

IPMDAR DID Reference

1.5 Data Repository. The Office of the Under Secretary of Defense (OUSD) Acquisition, Analytics and Policy (AAP) Earned Value Management (EVM) Division maintains a secure website, the Earned Value Management Central Repository (EVM-CR)[2], for all unclassified, proprietary and non-proprietary data from programs and contracts that have EVM reporting requirements, regardless of a program's Acquisition Category (ACAT) designation or a contract's value. The EVM-CR is housed on an unclassified computer system designed to control sensitive and proprietary contractor data. The system will accept only unclassified data including contracts with EVM data that are marked as For Official Use Only (FOUO), Business Sensitive, and/or Proprietary. No classified material shall be provided to the EVM-CR. Refer to DoD Manual 5200.01 Volume 4 for information regarding designation and marking of Controlled Unclassified Information (CUI).

EVM-CR Reporting Requirement

5000.85 Major Capability Acquisition (MCA) Pathway

- All programs required to submit to the EVM-CR

EVMS Reporting Requirements Table

Contract Value	Applicability	Notes	Source
< $20M	Not required	IPMDAR may be used if cost and/or schedule reporting is requested by the program management office	Integrated Program Management Report DID DI-MGMT-81861B*
≥ $20M & < $100M	Required monthly when EVMS requirement is on contract	All IPMDAR datasets/ files must be included in the CDRL. Tailoring in accordance with DI-MGMT-81861B and Implementation Guide is allowed.	
≥ $100M	Required monthly when EVMS requirement is on contract	IPMDAR is required. All files are required.	

Additional Information

All contracts, task orders, and delivery orders, IPMDAR data will be delivered to the EVMS Central Repository.

The IPMDAR can be tailored to collect cost and/or schedule data for any contract regardless of whether EVMS is required. For information on tailoring the IPMDAR, refer to the DoD IPMDAR Implementation Guide.

Formats and reporting requirements for the IPMDAR are determined and managed by USD(A&S) through the Office of Acquisition Analytics and Policy (AAP).

Reporting thresholds are in then-year dollars.

* DI-MGMT-81861B = Data Item Management-81861

Any contracts >$20M with EVM Reporting requirements must submit to the EVM-CR – independent of pathway

What is the EVM-CR?

- The EVM-CR is a data repository managed by the EVM division of OUSD(A&S) AAP, the office of Acquisition, Analytics and Policy.
- The purpose of the EVM-CR is to establish a source of authoritative Earned Value Management (EVM) data for the Department and to provide prompt access for PMOs, Services, OSD, and DoD Components.

SUBMIT - INDUSTRY

- Monthly reports delivered direct from the supplier

REVIEW - GOVERNMENT

- Government PMO reviews and approves or rejects delivery

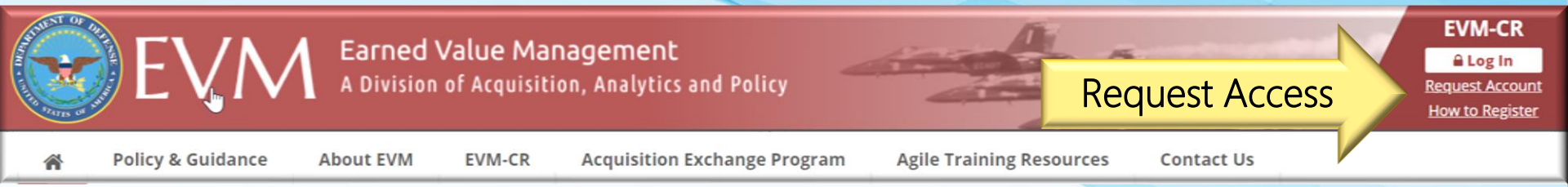
PUBLISH

- Published submissions are available to all approved DoD Analysts

IPMDAR doesn't change this process

EVM-CR Access Request and User Roles

Access – Request via AAP EVM public website https://www.acq.osd.mil/evm/#/home



Industry

Submitter

RESPONSIBLE FOR
Delivery of reports

APPROPRIATE FOR
Industry contractors

Industry Reviewer

RESPONSIBLE FOR
Oversight of reports delivered by all submitters from their organization

APPROPRIATE FOR
Industry contractors

ACCESS EVM-CR via

- External Certification Authority (**ECA**) certificate
- Certificates issued by major contractors Boeing, Northrup Grumman, Raytheon, and Lockheed Martin

Government

Reviewer

RESPONSIBLE FOR
Reviewing, approving, and publishing reports

Managing submitters and reviewers assigned to efforts

APPROPRIATE FOR
Program Office

Analyst

ALLOWED TO
View and download published reports

APPROPRIATE FOR
DoD

ACCESS EVM-CR via

- Common Access Card (**CAC**)
- NDAs: Support contractors must obtain and submit NDAs in order to gain reviewer or analyst permissions

IPMDAR Components

IPMDAR DID Reference

1.2 The IPMDAR consists of the following three components:

1.2.1 Contract Performance Dataset (CPD). Provides performance/execution data from the contractor's existing management systems.

1.2.2 Schedule (Comprised of both the Native Schedule File and the Schedule Performance Dataset (SPD)). Provides data from the contractor's Integrated Master Schedule (IMS).

1.2.3 Performance Narrative Report (Comprised of both the Executive Summary and the Detailed Analysis Report). Provides narrative analysis of data provided in the CPD and the Schedule.

IPMDAR vs. IPMR

IPMDAR	IPMR
CPD - Contract Performance Dataset (JSON)	Formats 1-4 & 7 XML (UN/CEFACT)
SPD - Schedule Performance Dataset	Format 6 XML (UN/CEFACT)
Native Schedule	Native Schedule
Performance Narrative • Executive Summary • Variance Analysis	Format 5
Not Required	Formats 1-4 (Human Readable)

IPMDAR Performance Narrative

Executive Summary

- A program and contract performance overview contains:
  - Top-level PM cost and schedule forecast
  - High-level variance summary
  - Undistributed budget (UB) and management reserve (MR) analysis

Detailed Analysis Report

- Compilation of write-ups to describe the variances within a certain scope of the contract at the control account level.

Delivery Timing

Legacy IPMR Delivery Requirement

- 12-17 Days after the close of the contractors accounting period

IPMDAR Delivery Requirement

- Monthly submissions should be delivered to the EVM-CR NLT 16 days after the close of the contractor accounting period.

IPMDAR DID Reference

1.8 Delivery Timing.

1.8.1 Monthly Submission Requirement. IPMDAR data shall be required at least monthly. The reporting frequency shall be specified in the Contract Data Requirements List (CDRL). All reports shall reflect data from the same accounting period and shall be provided at any time after the close of the contractor's accounting period, but no later than sixteen (16) business days after the contractor's accounting period end date.

Incremental Reporting

IPMDAR DID Reference

1.8.1.1 Incremental Delivery. Reports may be provided incrementally, including preliminary data, with the number of days for delivery of each submittal tailored in the CDRL. Data delivered is not considered authoritative until the final submission and signature. The recommended incremental delivery process is the Schedule, followed by the CPD and the Executive Summary, Government review of submittals, Government directed Detailed Analysis, Contractor Detailed Analysis delivery and all final data.[5]

IPMDAR Implementation & Tailoring Guide - Example

For notional and guidance purposes the incremental delivery plan could be constructed as follows:

1. SPD – To be delivered with native file five (5) working days after the end of the contractor's accounting period (may be labeled preliminary)
2. CPD – To be delivered with the Executive Summary ten (10) working days after the end of the contractor's accounting period (may be labeled preliminary)
3. Contracting Office to select items for detailed analysis (variances) – to contractor thirteen (13) working days after the end of the contractor's accounting period
4. Performance Narrative Analysis – to be delivered NLT sixteen (16) working days after the end of the contractor's accounting period along with any other "final" versions of previously submitted files

Note: The notional incremental delivery plan above is not additive.

IPMDAR CDRL Tailoring Options

- Level of reporting (Work package, Control Account, WBS, etc.)
- Units (dollars or hours, both)
- Frequency (monthly, incremental, weekly, quarterly, annually, upon request)
- Variance Analysis Options (Government Identified Variances, Government Specified Variance Thresholds, Specific Number of Variances)
- Tailoring out “formats” (e.g., Schedule Only deliverable)
- Eliminating Performance Narrative Report and using internally generated Contractor Explanations or performance reviews
- Eliminating Schedule Data set and receiving Native Format Schedule only

Additional tailoring options discussed in the IPMDAR Implementation and Tailoring Guide; available on the EVM public website

Reporting Requirements

CDRLs Determine Reporting Requirements

- IPMDAR DID is put on contract
- CDRLs created and sent to EVM-CR Admins
- Admins establish reporting requirements
- EVM-CR measures compliance against CDRL requirements (monthly reports sent to Services, Components and Industry corporate focal points).

Selected DID: IPMDAR | IPMR | CPR/IMS

Cost	Submit Days	Submit Day Type	Frequency
Contract Performance Dataset	16	Business	Monthly

Schedule	Submit Days	Submit Day Type	Frequency
Schedule Performance Dataset	16	Business	Monthly
Native Schedule	16	Business	Monthly

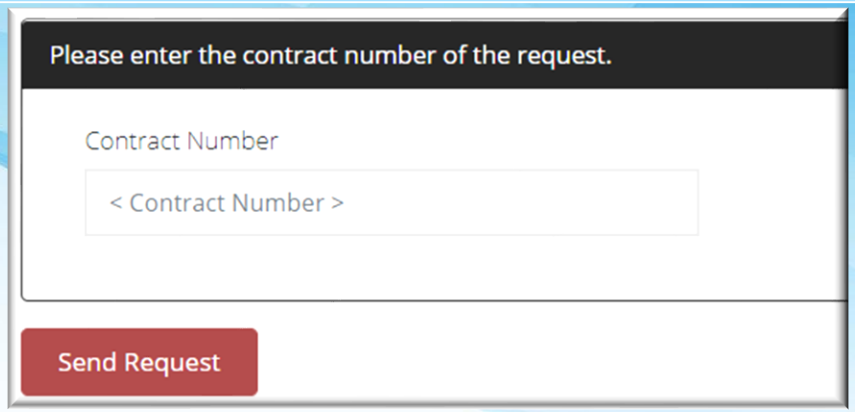
Performance Narrative	Submit Days	Submit Day Type	Frequency
Executive Summary	16	Business	Monthly
Variance Analysis	16	Business	Monthly

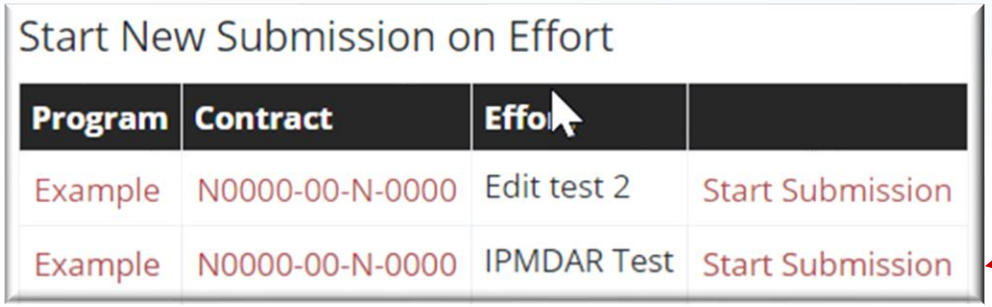
CFSR	Submit Days	Submit Day Type	Frequency
CFSR	30	Calendar	Quarterly

Example: IPMDAR Default Reporting Requirements

Submit

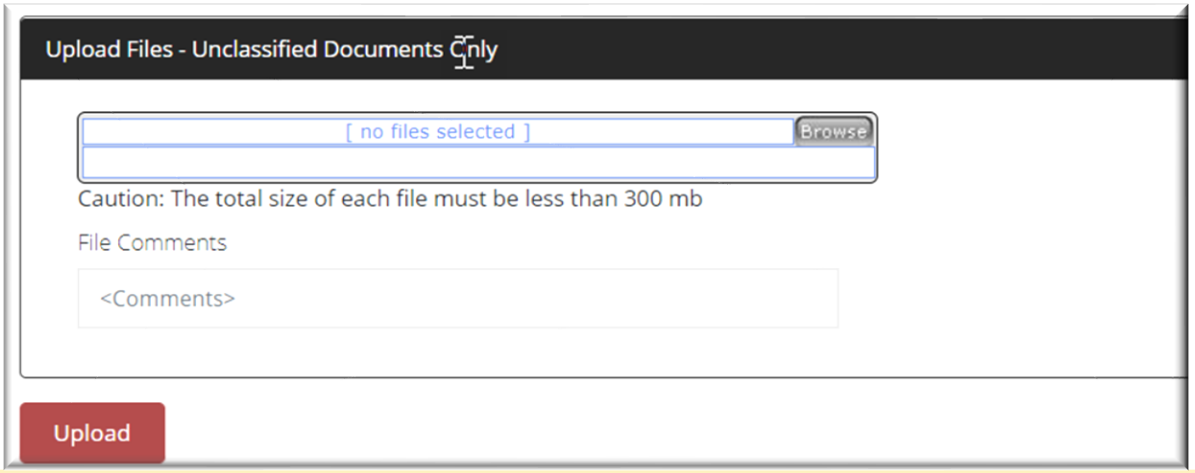
1. Submitter should verify they are added to Contract Effort. If not, request access via the website. PMO Lead Reviewer responsible for assigning Submitters.





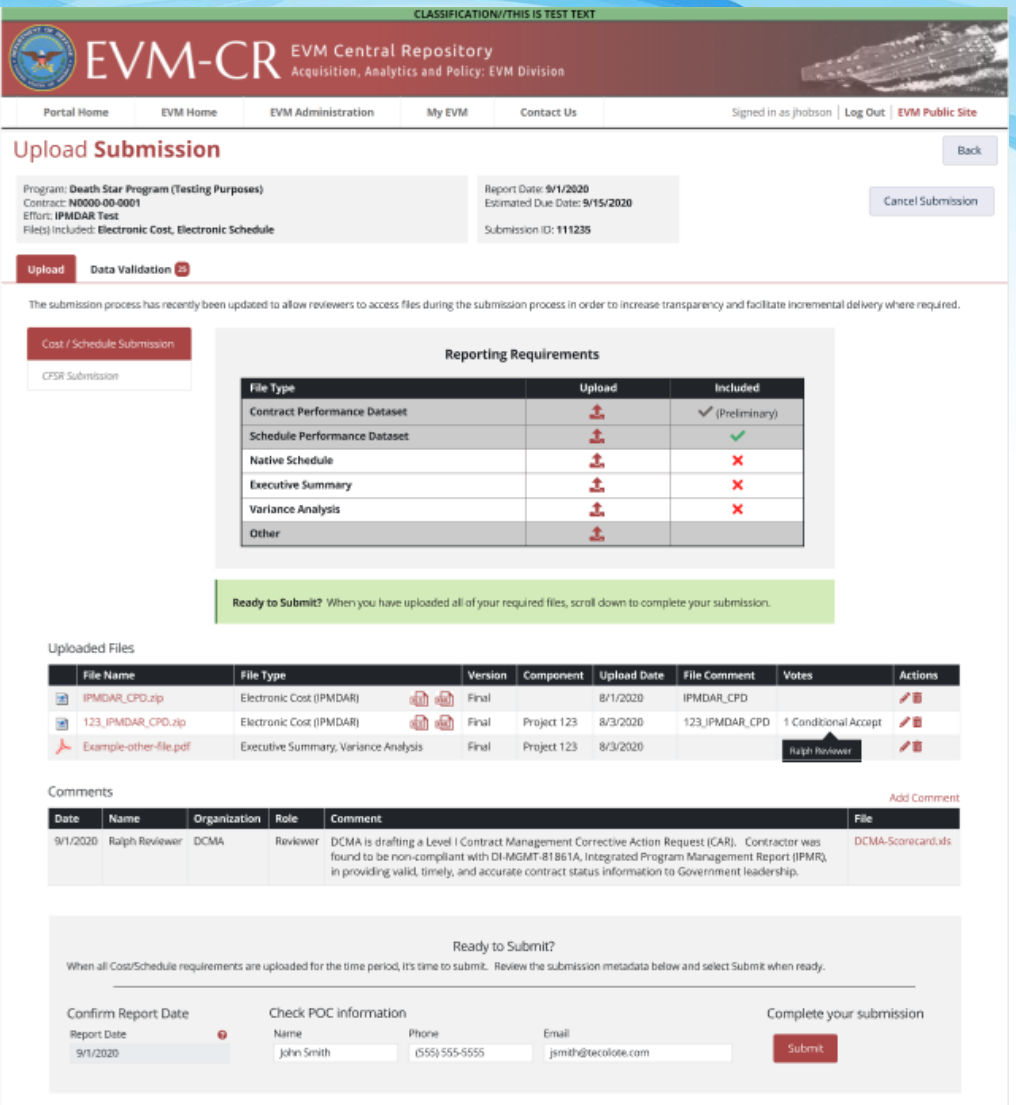
2. Submitter will click here to begin submission

3. Browse and Upload files



IPMDAR Incremental Workflow Being Developed

Submit & Review Workflow



Submit Workflow

- Delivery requirements with real time feedback:
  - ✓ File Uploaded
  - ✗ File Not Uploaded
- File(s) available to PMO immediately upon upload
- Cost & Schedule files contained in a single submission
- Immediate feedback on ***Data Quality Validation Results***

Design only. Implementation expected Nov – Dec 2020

Submit & Review Workflow

File Name	File Type	Report Date	File Level	Component Name	Source File Type	Upload Date	Version	Votes	My Vote
Jens IPMDAR_CPD.ZIP	Electronic Cost	1/1/2020	Total		IPMDAR	2/1/2020	Final	2 0 0	
Johns IPMDAR_CPD.ZIP	Electronic Cost	1/1/2020	Component	Johns Project	IPMDAR	2/1/2020	Final	2 0 0	Vote

2 Approved

Reviewer	Comments
Jen Horner	File is perfect
Daivon Land	Wow, amazing

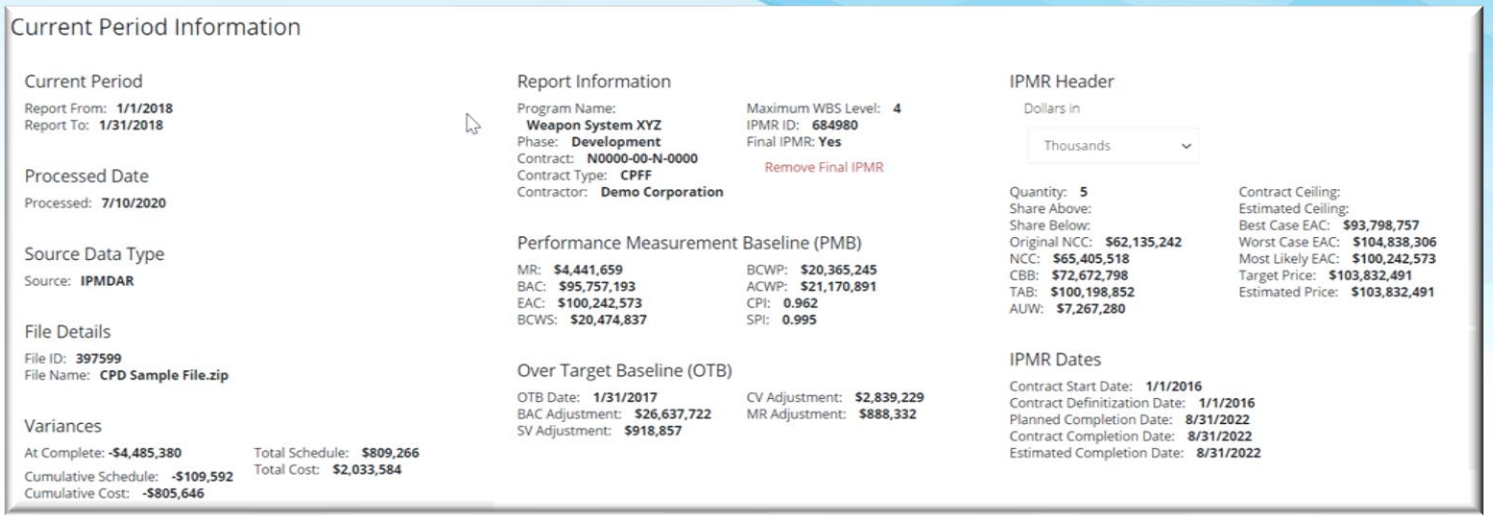
Review Workflow

- Access to file(s) immediately after uploaded
- Standard or Incremental delivery requirements - 10 day auto-publish window begins after the last file for the period has been delivered.
- Reviewer voting at the file level
  - Provides concise feedback
  - Allows for comment by each Reviewer
  - Facilitates collaboration
  - Available to Submit team real time

Design only. Implementation expected Nov – Dec 2020

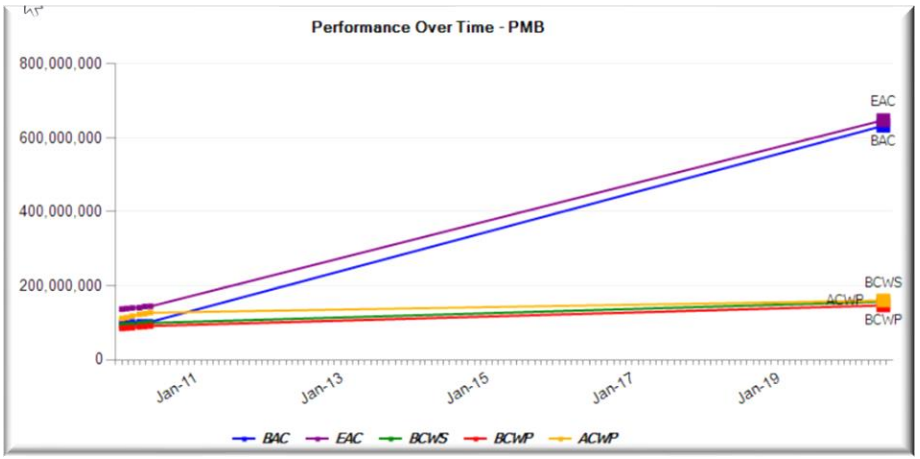
Submit & Review Checks

- **Date View** — Reviewer and Submitter should verify data accuracy



- **Data Validation Report** — Provides listing of all data checks and indicates if file passed or failed

- **Performance Over Time Chart** — Provides visual rendering of PMB data received since effort reporting started



Export Options With IPMDAR

XLS Export

Provides a tabular view of JSON tables and data

CSV Export

Provides data in Excel pivotable table

XML Export

Generates a legacy IPMR UN/CEFACT file from data provided in the IPMDAR JSON

Submission Files

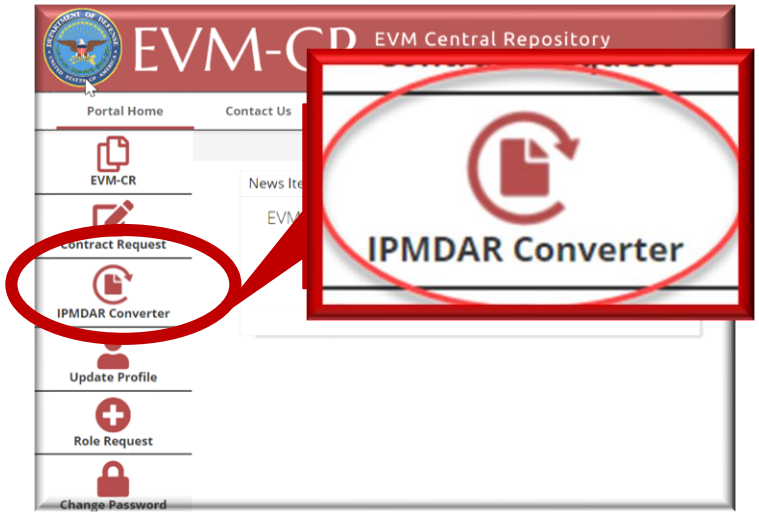
Cost

	File Name	Report Type
	CPD Sample File.zip XLS CSV XML	Electronic Cost

IPMDAR File Converter

- Generates a legacy IPMR Cost – UN/CEFACT file from the IPMDAR CPD JSON file
- Generates a legacy IPMR Format 6 file from the IPMDAR SPD JSON file

Web based tool
Requires EVM-CR Account



Downloadable Tools

- **Validation Utilities** check the file against the DEI (Data Exchange Instructions)
  - CPD and SPD
- **Conversion Utilities** generate legacy IPMR formats from IPMDAR files
  - CPD and SPD

Available on our public website and do not require an EVM-CR account to download

Many government networks block the download of an executable file.

Acronyms & References

Acronyms

- CPD – Contract Performance Dataset
- DEI – Data Exchange Instructions
- DID – Data Item Description
- EVM-CR – Earned Value Management Central Repository
- FFS – File Format Specification
- IPMDAR – Integrated Program Management Data and Analysis Report
- IPMR – Integrated Program Management Report
- SPD - Schedule Performance Dataset

References

- DEI & FFS https://www.acq.osd.mil/evm/#/policy-guidance/ipmdar-dei-ffs
- DID https://quicksearch.dla.mil/qsDocDetails.aspx?ident_number=278901
- Implementation & Tailoring Guide https://www.acq.osd.mil/evm/assets/docs/IPMDAR%20Implementation%20Guide%20-%20May2020%20-%20FINAL%20-%20Signed%20and%20Dated.pdf
- Desktop Tools https://www.acq.osd.mil/evm/#/resources

Questions About EVM-CR

Contact Us

Photo By: *Lisa Ferdinando*
DOD ***VIRIN:*** *190911-D-BN624-0441C.JPG*

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Backup

Live Demo Detour

- Ability to convert IPMDAR data to IPMR format; generate legacy reports, e.g., CPR Format 1
- Ability to convert IPMDAR data to flattened table for use with Excel Pivot Tables

	A	B	C	D	E	F	G	H	T	BT	BU	BV	CI
1	WBSElement_ID	WBSElem	WBSElem	WBSElem	WBSElem	WBSElem	WBSElem	WBSElem	OBSElement	ReportingPeriod _StartDate	ReportingPeriod _EndDate	BCWS_ToDate _Dollars	BCWS_ToDate _Hours
2	1.1.1.1	Subsysten	4	TOTAL	TOTAL	1.1	Subsysten	1.1.1	DEPT1	1/1/2016	1/31/2018	143310669	496187
3	1.1.1.1	Subsysten	4	TOTAL	TOTAL	1.1	Subsysten	1.1.1	DEPT2	1/1/2016	1/31/2018	115537096	379292
4	1.1.1.1	Subsysten	4	TOTAL	TOTAL	1.1	Subsysten	1.1.1	DEPT3	1/1/2016	1/31/2018	183217580	704744
5	1.1.1.1	Subsysten	4	TOTAL	TOTAL	1.1	Subsysten	1.1.1	DEPT4	1/1/2016	1/31/2018	136752176	520743
6	1.1.1.1	Subsysten	4	TOTAL	TOTAL	1.1	Subsysten	1.1.1	DEPT8	1/1/2016	1/31/2018	338042138	1242188
7	1.1.1.1	Subsysten	4	TOTAL	TOTAL	1.1	Subsysten	1.1.1	SUB1	1/1/2016	1/31/2018	32451945	106315
8	1.1.1.1	Subsysten	4	TOTAL	TOTAL	1.1	Subsysten	1.1.1	SUB2	1/1/2016	1/31/2018	239090698	1148320
9	1.1.1.2	Subsysten	4	TOTAL	TOTAL	1.1	Subsysten	1.1.1	DEPT1	1/1/2016	1/31/2018	309850733	1243865
10	1.1.1.2	Subsysten	4	TOTAL	TOTAL	1.1	Subsysten	1.1.1	DEPT2	1/1/2016	1/31/2018	142434439	495856
11	1.1.1.2	Subsysten	4	TOTAL	TOTAL	1.1	Subsysten	1.1.1	DEPT5	1/1/2016	1/31/2018	270273751	1016678
12	1.1.1.2	Subsysten	4	TOTAL	TOTAL	1.1	Subsysten	1.1.1	DEPT6	1/1/2016	1/31/2018	438862695	1905454
13	1.1.1.2	Subsysten	4	TOTAL	TOTAL	1.1	Subsysten	1.1.1	DEPT8	1/1/2016	1/31/2018	479965908	1874628

Flattened IPMDAR Contract Performance Data

IPMDAR Contract Performance Data Pivot Table

	A	B	C	D	E	F
1		BCWS (cum) Dollars	BCWP (cum) Dollars	ACWP (cum) Dollars	BAC Dollars	EAC Dollars
2	Subsystem 1.1.1.1	1,188,402,302	1,179,863,381	1,230,372,504	5,312,714,570	5,552,875,441
3	Subsystem 1.1.1.2	1,908,407,845	1,903,155,769	1,965,170,406	5,457,664,553	5,700,812,098
4	Subsystem 1.1.2.1	195,179,376	193,043,167	205,147,097	5,197,985,319	5,473,525,574
5	Subsystem 1.1.2.2	1,017,945,502	1,011,403,571	1,054,218,411	4,943,539,186	5,170,232,248
6	Subsystem 1.1.2.3	407,974,213	404,074,730	424,625,436	4,458,433,646	4,687,989,371
7	Subsystem 1.1.2.4	592,493,574	583,689,994	617,502,304	4,954,064,169	5,181,536,035
8	Subsystem 1.1.2.5	1,081,433,715	1,075,048,600	1,115,602,129	5,113,518,905	5,346,274,174
9	Subsystem 1.2	265,007,114	264,898,784	271,975,642	834,063,998	871,905,997
10	Subsystem 1.3	467,397,659	467,668,141	477,943,473	1,467,312,182	1,521,972,827
11	Subsystem 1.4.1	637,229,877	634,449,916	660,701,358	3,653,622,569	3,834,103,657
12	Subsystem 1.4.2	1,129,820,555	1,127,336,606	1,166,395,452	5,293,640,827	5,546,590,975
13	Subsystem 1.4.3	371,897,253	366,726,680	384,940,841	3,590,155,263	3,769,497,733
14	Subsystem 1.4.4	1,293,674,528	1,282,369,044	1,337,731,996	5,874,011,941	6,151,908,827
15	Subsystem 1.4.5.1	1,012,372,519	1,010,778,113	1,049,361,908	5,691,530,428	5,954,989,890
16	Subsystem 1.4.5.2	1,197,703,487	1,191,066,957	1,244,760,990	4,709,211,139	4,932,976,793
17	Subsystem 1.5.1	2,152,349,235	2,144,454,088	2,213,720,283	5,607,884,443	5,840,395,071
18	Subsystem 1.5.2	1,645,882,153	1,632,402,942	1,707,698,335	6,068,129,166	6,346,453,244
19	Subsystem 1.5.3	1,157,959,591	1,151,474,588	1,200,942,499	5,000,515,150	5,243,862,020
20	Subsystem 1.6	510,999,832	512,144,130	525,966,049	1,603,626,837	1,682,204,597
21	Summary: Cost of Money	203,967,852	202,917,155	210,908,040	953,572,742	997,787,299
22	Summary: General & Administrative	2,036,738,911	2,026,278,984	2,105,205,860	9,509,623,811	9,948,177,798
23	**Grand Total**	**20,474,837,093**	**20,365,245,340**	**21,170,891,013**	**95,294,820,844**	**99,756,071,669**

Data | Cumulative Dollars By WBS | Cumulative Hours ...

PivotTable Fields

Choose fields to add to report:

- WBSElement_ID
- **WBSElement_Name**
- WBSElement_Level
- WBSElement_ID_Level1
- WBSElement_Name_Level1
- WBSElement_ID_Level2
- WBSElement_Name_Level2

Drag fields between areas below:

FILTERS | COLUMNS: Values

ROWS: WBSElement_Name | VALUES: BCWS (cum)Dollars, BCWP (cum)Dollars, ACWP (cum)Dollars

Defer Layout Update | UPDATE

Example Pivot Table Applications

Responsibility Assignment Matrix

Sum of BCWS_ToComplete_Dollars	Column Labels														
Row Labels	Cpt Picard	Cpt. Kirk	Dr Crusher	Dr Pulaski	Mr. Data	Mr. E. Computer	Mr. L. McCoy	Mr. La Forge	Mr. Q	Mr. Riker	Mr. Spock	Mr. Worf	Ms. Guinan	Ms. T. Yar	Ms. Troi	Grand Total
Department 1		**750954204**	**1244411849**				**1630052364**				**1865364717**					**5490783134**
BMXF-MPJF-SPVD			255748347													255748347
BQDH-GDNV-GVLP							342192051									342192051
DGXF-QTVR-LDLT							94769357									94769357
DHNQ-DZFW-BHVM											101107804					101107804
FNLV-VXQW-MJQF											609170702					609170702
GQVR-SYBG-QWQY							369697724									369697724
LWPP-JKCH-DHLW							109605215									109605215
NFQB-CLQS-TNYG			551015710													551015710
PCMS-FVSX-RJKP			437647792													437647792
PPCZ-JXLN-JFSL											323329727					323329727
PVJZ-HFKS-QRRY							381989375									381989375
RLBW-TGHD-FCPX											478813141					478813141
TDYZ-ZXKX-NYHX							331798642									331798642
TSQD-PCZS-TZDP											352943343					352943343
VTKF-ZZHX-YXMX		430733622														430733622
XYJM-MFPH-RXRG		320220582														320220582
Department 2	**628955144**				**3349305886**				**1220517189**						**1932382504**	**7131160723**
Department 3								**2582858379**				**2782641771**		**2519030150**		**7884530300**
Department 4													**6709551675**			**6709551675**
Department 5						**5658985328**										**5658985328**
Department 6						**7169112322**										
Department 7						**7129586928**										
Department 8						**7300900593**										
Subcontractor 1																
Subcontractor 2				**5679931881**												
Summary: Cost of Money						**749604890**										
Summary: COM						749604890										
Summary: General & Administrative						**7472884900**										
Summary: GA						7472884900										
Grand Total	**628955144**	**750954204**	**1244411849**	**5679931881**	**3349305886**	**35481074961**	**1630052364**									

Estimate to Complete by Control Account

Sum of BCWS_ToComplete_Dollars	Column Labels				
Row Labels	Cpt. Kirk	Dr Crusher	Mr. L. McCoy	Mr. Spock	Grand Total
Department 1	**750954204**	**1244411849**	**1630052364**	**1865364717**	**5490783134**
BMXF-MPJF-SPVD		255748347			255748347
BQDH-GDNV-GVLP			342192051		342192051
DGXF-QTVR-LDLT			94769357		94769357
DHNQ-DZFW-BHVM				101107804	101107804
FNLV-VXQW-MJQF				609170702	609170702
GQVR-SYBG-QWQY			369697724		369697724
LWPP-JKCH-DHLW			109605215		109605215
NFQB-CLQS-TNYG		551015710			551015710
PCMS-FVSX-RJKP		437647792			437647792
PPCZ-JXLN-JFSL				323329727	323329727
PVJZ-HFKS-QRRY			381989375		381989375
RLBW-TGHD-FCPX				478813141	478813141
TDYZ-ZXKX-NYHX			331798642		331798642
TSQD-PCZS-TZDP				352943343	352943343
VTKF-ZZHX-YXMX	430733622				430733622
XYJM-MFPH-RXRG	320220582				320220582
Grand Total	**750954204**	**1244411849**	**1630052364**	**1865364717**	**5490783134**

Separating The Data From Printable Formats Enables Utilization Of Modern Tools

Example Pivot Table Applications

Budget At Complete by Control Account

Sum of BCWS_AtCompleti Column Labels	Department 1	Department 2	Department 3	Department 4	Department 5	Department 6	Department 7	Department 8	Subcontractor 1	Subcontractor 2	Summary: Cost of Money	Summary: General & Administrative	Grand Total
Subsystem 1.1.1.1	$ 463,531,251	$ 493,798,214	$ 492,274,403	$ 288,094,804	$ 375,837,163	$ 370,245,647	$ 991,964,798	$ 833,542,968	$ 601,360,669	$ 402,064,653	$ -	$ -	$ 5,312,714,570
Subsystem 1.1.1.2	$ 740,584,355	$ 393,128,465	$ 677,529,702	$ 270,830,128	$ 784,933,168	$ 795,549,681	$ 252,786,040	$ 724,867,638	$ 425,063,294	$ 392,392,082	$ -	$ -	$ 5,457,664,553
Subsystem 1.1.2.1	$ 609,170,702	$ 274,729,718	$ 488,359,338	$ 270,210,682	$ 581,109,921	$ 466,380,337	$ 522,373,871	$ 663,573,463	$ 1,002,692,880	$ 319,384,407	$ -	$ -	$ 5,197,985,319
Subsystem 1.1.2.2	$ 177,812,934	$ 423,233,743	$ 362,819,878	$ 849,451,563	$ 501,419,224	$ 379,079,857	$ 406,142,501	$ 462,345,680	$ 562,147,762	$ 819,086,044	$ -	$ -	$ 4,943,539,186
Subsystem 1.1.2.3	$ 410,371,788	$ 523,029,947	$ 452,998,317	$ 377,466,809	$ 328,863,325	$ 235,467,492	$ 923,113,111	$ 314,591,146	$ 416,693,581	$ 475,838,130	$ -	$ -	$ 4,458,433,646
Subsystem 1.1.2.4	$ 522,076,604	$ 454,362,781	$ 175,907,369	$ 473,630,465	$ 558,561,723	$ 413,016,470	$ 166,851,143	$ 562,725,722	$ 733,849,274	$ 893,082,618	$ -	$ -	$ 4,954,064,169
Subsystem 1.1.2.5	$ 539,655,757	$ 394,045,301	$ 509,395,843	$ 331,496,346	$ 646,577,038	$ 819,286,564	$ 477,433,874	$ 602,916,402	$ 266,424,917	$ 526,286,863	$ -	$ -	$ 5,113,518,905
Subsystem 1.2	$ -	$ -	$ -	$ -	$ -	$ 834,063,998	$ -	$ -	$ -	$ -	$ -	$ -	$ 834,063,998
Subsystem 1.3	$ -	$ -	$ -	$ -	$ -	$ 1,467,312,182	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,467,312,182
Subsystem 1.4.1	$ 437,352,599	$ 432,023,442	$ 334,812,915	$ 575,681,148	$ 216,216,501	$ 153,033,942	$ 423,485,864	$ 265,988,216	$ 353,782,624	$ 461,245,318	$ -	$ -	$ 3,653,622,569
Subsystem 1.4.2	$ 202,968,810	$ 454,918,557	$ 417,564,548	$ 607,359,728	$ 212,830,613	$ 488,901,526	$ 927,636,838	$ 730,146,094	$ 979,346,986	$ 271,967,127	$ -	$ -	$ 5,293,640,827
Subsystem 1.4.3	$ 331,798,642	$ 258,036,410	$ 489,609,676	$ 319,688,498	$ 328,266,601	$ 247,636,734	$ 333,937,851	$ 605,795,873	$ 427,110,255	$ 248,274,723	$ -	$ -	$ 3,590,155,263
Subsystem 1.4.4	$ 369,697,724	$ 599,199,934	$ 858,727,469	$ 782,137,450	$ 500,625,444	$ 372,146,138	$ 864,136,333	$ 563,496,687	$ 275,307,111	$ 688,537,651	$ -	$ -	$ 5,874,011,941
Subsystem 1.4.5.1	$ 325,837,648	$ 1,080,353,740	$ 500,007,872	$ 486,521,799	$ 842,264,755	$ 355,283,412	$ 304,966,926	$ 770,265,240	$ 549,783,722	$ 476,245,314	$ -	$ -	$ 5,691,530,428
Subsystem 1.4.5.2	$ 381,989,375	$ 761,476,545	$ 470,897,320	$ 1,074,397,177	$ 233,616,512	$ 404,222,309	$ 189,357,960	$ 242,356,775	$ 288,253,319	$ 662,643,847	$ -	$ -	$ 4,709,211,139
Subsystem 1.5.1	$ 457,276,028	$ 700,368,826	$ 421,421,684	$ 357,817,466	$ 259,979,617	$ 1,159,398,990	$ 553,937,408	$ 784,246,462	$ 539,534,757	$ 373,903,205	$ -	$ -	$ 5,607,884,443
Subsystem 1.5.2	$ 340,944,638	$ 400,287,288	$ 1,038,900,704	$ 1,064,072,585	$ 251,085,184	$ 317,320,730	$ 798,457,870	$ 723,138,384	$ 507,262,183	$ 626,659,600	$ -	$ -	$ 6,068,129,166
Subsystem 1.5.3	$ 870,829,189	$ 732,691,750	$ 463,159,271	$ 169,494,474	$ 398,010,940	$ 312,799,704	$ 233,038,019	$ 638,559,574	$ 552,972,533	$ 628,959,696	$ -	$ -	$ 5,000,515,150
Subsystem 1.6	$ -	$ -	$ 1,603,626,837	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,603,626,837
Summary: Cost of Money	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 953,572,742	$ -	$ 953,572,742
Summary: General & Admir	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 9,509,623,811	$ 9,509,623,811
Grand Total	**$ 7,181,898,044**	**$ 8,375,684,661**	**$ 9,758,013,146**	**$ 8,298,351,122**	**$ 7,020,197,729**	**$ 9,591,145,713**	**$ 8,369,620,407**	**$ 9,488,556,324**	**$ 8,481,585,867**	**$ 8,266,571,278**	**$ 953,572,742**	**$ 9,509,623,811**	**$ 95,294,820,844**

ControlAccount_ManagerName	Mr. Data	
Sum of BCWS_ToComplete_Dollars	Column Labels	
Row Labels	Department 2	Grand Total
Subsystem 1.4.5.1	1080353740	1080353740
Subsystem 1.4.5.2	666617008	666617008
Subsystem 1.5.1	593246143	593246143
Subsystem 1.5.2	313315512	313315512
Subsystem 1.5.3	695773483	695773483
Grand Total	**3349305886**	**3349305886**

CAM Budget

Side-by-Side Dollars/Hours

	BCWS (cum) Dollars	BCWS (cum) Hours
⊞ Summary: Cost of Money	203,967,852	0
⊞ Summary: General & Administrative	2,036,738,911	0
⊟ TOTAL	18,234,130,330	69,876,865
⊟ Subsystem 1.1	6,391,836,527	24,417,208
Subsystem 1.1.1	3,096,810,147	12,160,830
Subsystem 1.1.2	3,295,026,380	12,256,378
⊞ Subsystem 1.2	265,007,114	1,040,467
⊞ Subsystem 1.3	467,397,659	1,855,008
⊟ Subsystem 1.4	5,642,698,219	21,274,715
Subsystem 1.4.1	637,229,877	2,387,638
Subsystem 1.4.2	1,129,820,555	4,182,659
Subsystem 1.4.3	371,897,253	1,490,751
Subsystem 1.4.4	1,293,674,528	4,657,760
Subsystem 1.4.5	2,210,076,006	8,555,907
⊟ Subsystem 1.5	4,956,190,979	19,172,227
Subsystem 1.5.1	2,152,349,235	8,043,515
Subsystem 1.5.2	1,645,882,153	6,418,807
Subsystem 1.5.3	1,157,959,591	4,709,905
⊞ Subsystem 1.6	510,999,832	2,117,240
Grand Total	20,474,837,093	69,876,865

Separating The Data From Printable Formats Enables Utilization Of Modern Tools

Example Pivot Table Applications

Element of Cost by Control Account (Hours/Dollars)

ControlAccount_ManagerName (All)

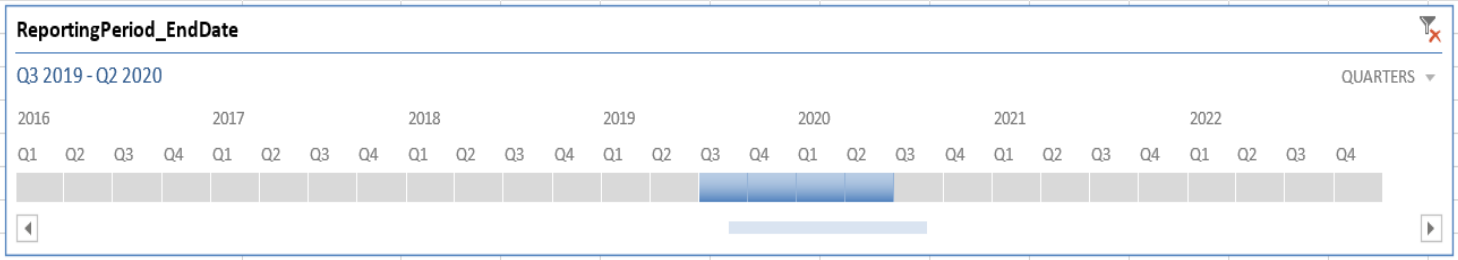
Row Labels	BCWS Hours ToDate	BCWS ToDate $	BCWS ToDate Lab $	BCWS ToDate Mat $	BCWS ToDate ODC $	BCWS ToDate Sub $	BCWS Hours ToCmpt	BCWS ToCmpt $
Summary: Cost of Money	**0**	**$203,967,852**	**$0**	**$0**	**$0**	**$0**	**0**	**$749,604,890**
Summary: General & Administrative	**0**	**$2,036,738,911**	**$0**	**$0**	**$0**	**$0**	**0**	**$7,472,884,900**
TOTAL	**69876865**	**$18,234,130,330**	**$7,251,267,995**	**$4,572,743,060**	**$1,831,293,797**	**$4,578,825,478**	**253136716**	**$66,597,493,961**
Subsystem 1.1	**24417208**	**$6,391,836,527**	**$2,544,102,246**	**$1,594,156,919**	**$641,717,039**	**$1,611,860,323**	**110099392**	**$29,046,083,821**
Subsystem 1.1.1	12160830	$3,096,810,147	$1,228,923,142	$774,562,387	$309,662,078	$783,662,540	28391211	$7,673,568,976
Subsystem 1.1.2	12256378	$3,295,026,380	$1,315,179,104	$819,594,532	$332,054,961	$828,197,783	81708181	$21,372,514,845
Subsystem 1.2	**1040467**	**$265,007,114**	**$104,115,541**	**$67,676,296**	**$25,685,658**	**$67,529,619**	**2238544**	**$569,056,884**
(blank)	1040467	$265,007,114	$104,115,541	$67,676,296	$25,685,658	$67,529,619	2238544	$569,056,884
Subsystem 1.3	**1855008**	**$467,397,659**	**$195,806,670**	**$115,572,447**	**$44,238,411**	**$111,780,131**	**3771757**	**$999,914,523**
(blank)	1855008	$467,397,659	$195,806,670	$115,572,447	$44,238,411	$111,780,131	3771757	$999,914,523
Subsystem 1.4	**21274715**	**$5,642,698,219**	**$2,214,134,722**	**$1,423,372,422**	**$571,093,753**	**$1,434,097,322**	**88951915**	**$23,169,473,948**
Subsystem 1.4.1	2387638	$637,229,877	$254,972,824	$163,571,149	$64,472,038	$154,213,866	11699958	$3,016,392,692
Subsystem 1.4.2	4182659	$1,129,820,555	$443,994,690	$284,927,080	$111,925,918	$288,972,867	16485389	$4,163,820,272
Subsystem 1.4.3	1490751	$371,897,253	$144,736,375	$90,400,269	$39,192,858	$97,567,751	12638031	$3,218,258,010
Subsystem 1.4.4	4657760	$1,293,674,528	$488,296,318	$332,485,939	$130,775,818	$342,116,453	17226071	$4,580,337,413
Subsystem 1.4.5	8555907	$2,210,076,006	$882,134,515	$551,987,985	$224,727,121	$551,226,385	30902466	$8,190,665,561
Subsystem 1.5	**19172227**	**$4,956,190,979**	**$1,983,395,612**	**$1,242,147,946**	**$502,878,519**	**$1,227,768,902**	**43892533**	**$11,720,337,780**
Subsystem 1.5.1	8043515	$2,152,349,235	$850,656,059	$530,493,461	$224,874,225	$546,325,490	12738157	$3,455,535,208
Subsystem 1.5.2	6418807	$1,645,882,153	$657,715,794	$419,378,558	$161,881,377	$406,906,424	16650306	$4,422,247,013
Subsystem 1.5.3	4709905	$1,157,959,591	$475,023,759	$292,275,927	$116,122,917	$274,536,988	14504070	$3,842,555,559
Subsystem 1.6	**2117240**	**$510,999,832**	**$209,713,204**	**$129,817,030**	**$45,680,417**	**$125,789,181**	**4182575**	**$1,092,627,005**
(blank)	2117240	$510,999,832	$209,713,204	$129,817,030	$45,680,417	$125,789,181	4182575	$1,092,627,005
Grand Total	**69876865**	**$20,474,837,093**	**$7,251,267,995**	**$4,572,743,060**	**$1,831,293,797**	**$4,578,825,478**	**253136716**	**$74,819,983,751**

Separating The Data From Printable Formats Enables Utilization Of Modern Tools

Example Pivot Table Applications

Time-Phased Future Forecast by CAM (Dollars)

Sum of BCWS_ToComplete_Dollars	Column Labels											
Row Labels	7/31/2019	8/31/2019	9/30/2019	10/31/2019	11/30/2019	12/31/2019	1/31/2020	2/29/2020	3/31/2020	4/30/2020	5/31/2020	6/30/2020
Mr. La Forge	**65703951**	**82112263**	**82314881**	**82807397**	**80349957**	**80094450**	**83304906**	**81106558**	**84300462**	**81626195**	**84530409**	**63963078**
BLYK-XLHH-WDHG	17100249	15537669	17564130	17433769	16536396	16061107	17753693	16052180	16734273	15904784	16918761	17584618
JFYZ-WWCY-YXHB	9742614	10087615	8628042	9329935	9632646	9810990	9931498	9613136	9616199	9551737	10052177	9051194
KTQQ-XFZY-DYCP	9761042	10084179	10477115	10433407	9833519	10229348	10405896	9550157	10404835	10452532	9840909	10807356
RWCG-TXRN-LYGC	19789771	20219645	19074222	18843001	18478330	19034744	18589912	19981323	20472894	19996580	20692924	
SWRG-HCFK-HKTZ	9310275	8363573	8966176	9270872	8746552	8295459	9420865	9097952	9154239	8072280	8971198	8926297
XXKG-KSQM-QRFG		17819582	17605196	17496413	17122514	16662802	17203042	16811810	17918022	17648282	18054440	17593613



CAM Forecast (Dollars)

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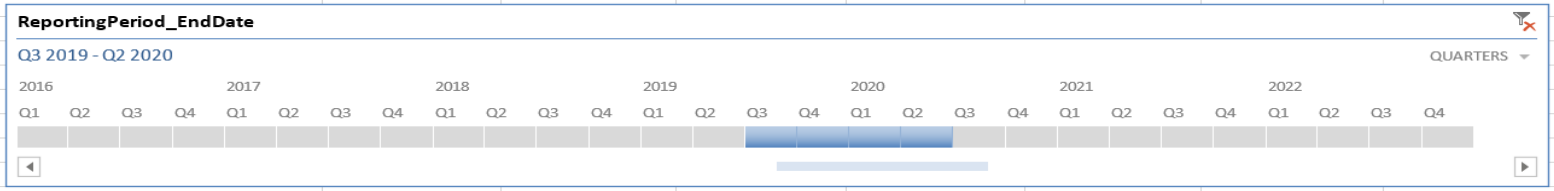
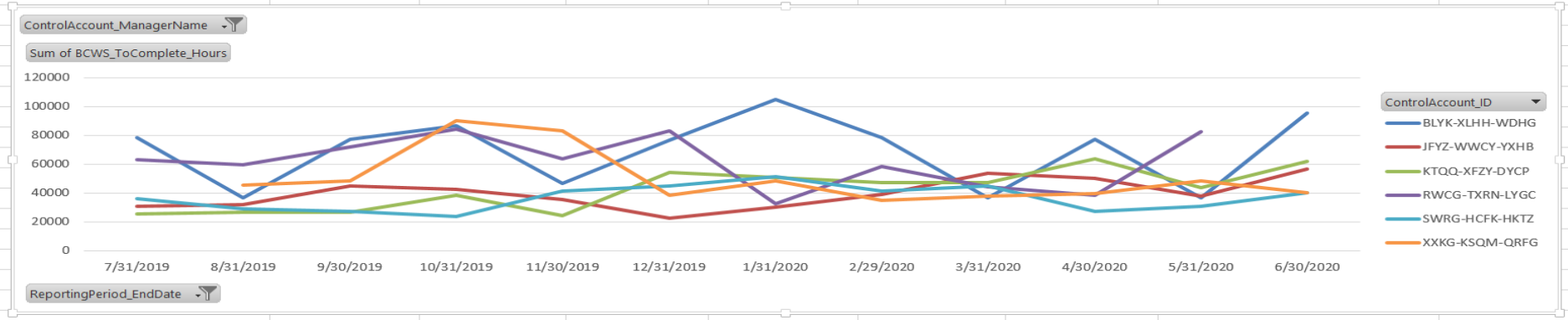
Example Pivot Table Applications

Time-Phased Forecast by CAM (Hours)

ControlAccount_ManagerName	Mr. La Forge					
Sum of BCWS_ToComplete_Hours	Column Labels					
Row Labels	BLYK-XLHH-WDHG	JFYZ-WWCY-YXHB	KTQQ-XFZY-DYCP	RWCG-TXRN-LYGC	SWRG-HCFK-HKTZ	XXKG-KSQM-QRFG
7/31/2019	78410	30541	25603	62907	35838	
8/31/2019	36811	32167	26480	59432	29039	45511
9/30/2019	77334	44818	26571	72109	27376	48172
10/31/2019	86897	42293	38503	84123	23790	90207
11/30/2019	46745	35268	24320	63835	41173	82938
12/31/2019	76382	22298	54366	83382	44817	38538
1/31/2020	104812	29999	51048	32266	51658	48324
2/29/2020	78552	38811	47280	58706	41275	35069
3/31/2020	36795	53739	47267	44523	44731	37681
4/30/2020	77057	50395	63684	38226	27212	39742
5/31/2020	36386	37644	43827	82368	30677	48551
6/30/2020	95624	56615	62136		40198	40233





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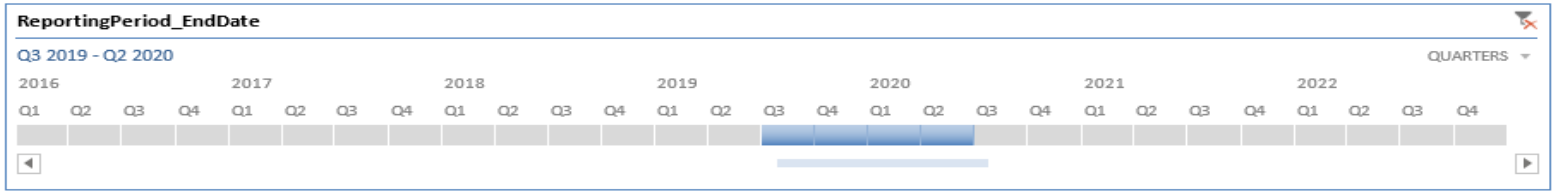
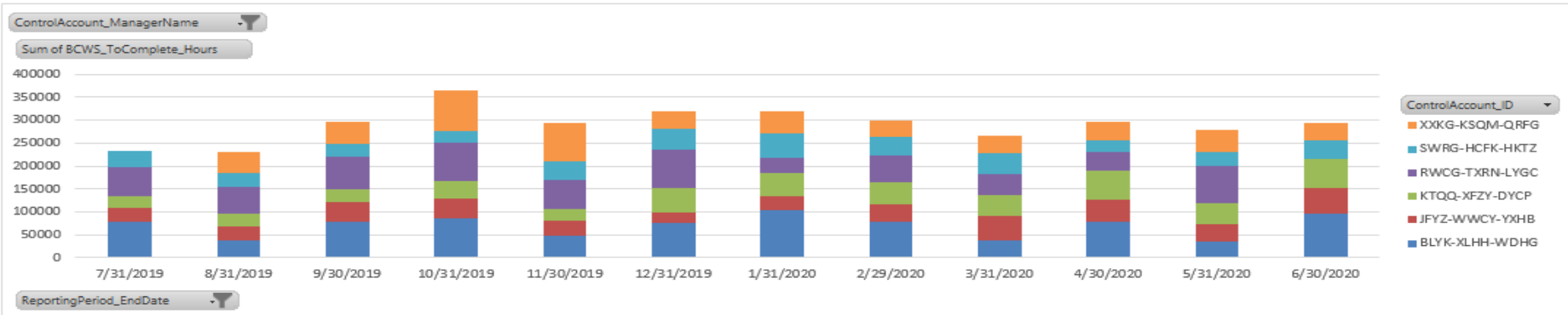
Example Pivot Table Applications

Time-Phased Future Forecast by CAM (Hours)

ControlAccount_ManagerName Mr. La Forge

Sum of BCWS_ToComplete_Hours	Column Labels					
Row Labels	BLYK-XLHH-WDHG	JFYZ-WWCY-YXHB	KTQQ-XFZY-DYCP	RWCG-TXRN-LYGC	SWRG-HCFK-HKTZ	XXKG-KSQM-QRFG
7/31/2019	78410	30541	25603	62907	35838	
8/31/2019	36811	32167	26480	59432	29039	45511
9/30/2019	77334	44818	26571	72109	27376	48172
10/31/2019	86897	42293	38503	84123	23790	90207
11/30/2019	46745	35268	24320	63835	41173	82938
12/31/2019	76382	22298	54366	83382	44817	38538
1/31/2020	104812	29999	51048	32266	51658	48324
2/29/2020	78552	38811	47280	58706	41275	35069
3/31/2020	36795	53739	47267	44523	44731	37681
4/30/2020	77057	50395	63684	38226	27212	39742
5/31/2020	36386	37644	43827	82368	30677	48551
6/30/2020	95624	56615	62136		40198	40233





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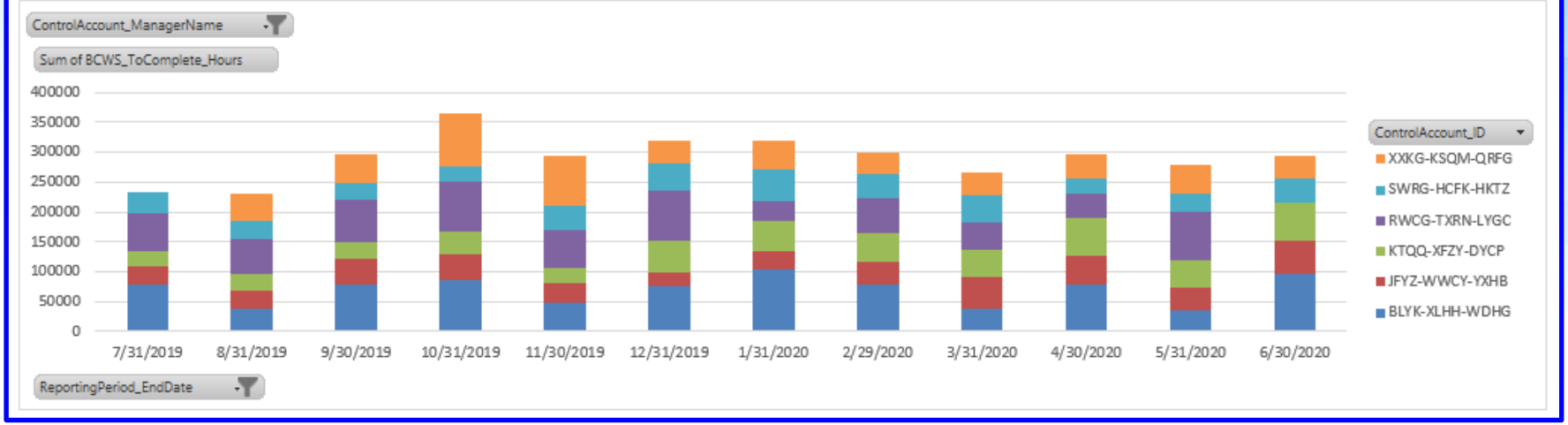
Example Pivot Table Applications

Derived FTE Chart by Control Account



Derived FTE Chart by CAM

Total Date	Total Hours	Total FTE
7/31/2019	233299.0	1534.9
8/31/2019	229440.0	1509.5
9/30/2019	296380.0	1949.9
10/31/2019	365813.0	2406.7
11/30/2019	294279.0	1936.0
12/31/2019	319783.0	2103.8
1/31/2020	318107.0	2092.8
2/29/2020	299693.0	1971.7
3/31/2020	264736.0	1741.7
4/30/2020	296316.0	1949.4
5/31/2020	279453.0	1838.5
6/30/2020	294806.0	1939.5

Separating The Data From Printable Formats Enables Utilization Of Modern Tools

Questions About IPMDAR

Open Communication & Transparency Are Key To Effective Program Management